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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

PROCTOR, JASON SCOTT

ART UNIT PAPER NUMBER

2123

DATE MAILED: 06/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/032,960	Applicant(s) LANDERS ET AL.	
	Examiner Jason Proctor	Art Unit 2123	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 April 2006.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 11, 12, 23-31, 39, 40, 51-59, 67-72 and 80-82 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 11, 12, 23-31, 39, 40, 51-59, 67-72 and 80-82 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 January 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 1-82 were rejected in Office Action of 3 May 2005. Applicants' response submitted 18 April 2006 has amended claim 1-3, 11-12, 29-31, 39-40, 57-59, and 70-72; claims 4-10, 13-22, 32-38, 41-50, 60-66, and 73-79 have been cancelled.

Claims 1-3, 11-12, 23-31, 39-40, 51-59, 67-72, and 80-82 are pending in this application.

Claims 1-3, 11-12, 23-31, 39-40, 51-59, 67-72, and 80-82 are rejected.

Applicants' response submitted on 18 April 2006 is a timely response to the previous Office Action. Applicants' initial response was submitted on 1 August 2005, but was misfiled by the Office and not discovered until 5 April 2006. Applicants were notified that the initial response was non-compliant and given a period for reply. Applicants responded in a timely fashion to that notice. This Office Action is directed to the 18 April 2006 papers.

Priority

Applicants' claim for priority under 35 U.S.C. § 119(e) to application 60/276,255 filed on March 14, 2001 is acknowledged.

Terminal Disclaimer

The terminal disclaimer filed on 18 April 2006 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of

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any patent granted on application 10/355,749 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Claim Rejections - 35 USC § 112

The previous rejections under 35 U.S.C. § 112, second paragraph, have been withdrawn in response to Applicants' remarks and amendments to the claims.

The following is a quotation of the second paragraph of 35 U.S.C. § 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claims 39-40, 67-69, and 80-82 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims listed above depend from cancelled claims. It may be possible to speculate from the amendments that claim 39 should depend from claim 29. The dependency of claims 67-69 is entirely unclear. These claims would lack proper antecedent basis if they depended from any of claims 57-59 which are the only other pending claims from the original claim tree. A corresponding situation exists for claims 80-82 in relation to claims 70-72.

For the purposes of examination, claims 39-40 will be understood as depending from claim 29. Claims 67-69 and 80-82 will not be further treated.

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2. Claims 3, 59, and 72 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 3, 59, and 72 recite “wherein the references planes are children of the model is a parent that correspond to a real-world part” the meaning of which is unknown. There appears to be a grammatical error in this phrase, else the Examiner requests assistance in parsing the language.

For the purposes of examination, claims 3, 59, and 72 are interpreted as reciting “wherein the reference planes are children of the model, and the model correspond to a real-world part.”

Claim Rejections - 35 USC § 101

The previous rejection of claims 1-28 and 57-69 under 35 U.S.C. § 101 have been withdrawn in light of Applicants’ remarks and amendments to the claims.

35 U.S.C. § 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. 70-72 are rejected under 35 U.S.C. § 101 because the claimed invention is directed to non-statutory subject matter.

Claims 70-72 are drawn to “a computer data signal propagated over a transmission medium for communicating with a computer, the signal including code configured to ...” which is nonstatutory. These claims encompass, for example, an

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electromagnetic wave, and therefore attempts to patent natural phenomena. As such, these claims fall into the judicially created exceptions to 35 U.S.C. § 101 as outlined in MPEP 2106 (IV)(B)(1)(c).

(c) Natural Phenomena Such as Electricity and Magnetism

Claims that recite nothing but the physical characteristics of a form of energy, such as a frequency, voltage, or the strength of a magnetic field, define energy or magnetism, *per se*, and as such are nonstatutory natural phenomena. *O'Reilly v. Morse*, 56 U.S. (15 How.) 62, 112-14 (1853). However, a signal claim directed to a practical application of electromagnetic energy is statutory regardless of its transitory nature. See *O'Reilly*, 56 U.S. at 114-19; *In re Breslow*, 616 F.2d 516, 519-21, 205 USPQ 221, 225-26 (CCPA 1980).

To expedite a complete examination of the instant application the claims rejected under 35 U.S.C. § 101 (nonstatutory) above are further rejected as set forth below in anticipation of applicant amending these claims to place them within the four statutory categories of invention.

Applicants' Admissions

Several of the rejections under 35 U.S.C. §§ 102 and 103, below, make reference to Applicants' admissions as found in the disclosure of the application. The Examiner has provided a selection of these admissions below for Applicants' convenience, however this selection is not intended to be exhaustive.

Page 3, lines 2-5

The disclosed method may be implemented on any CAD/CAM software package that supports (a) reference planes or their Cartesian equivalents, (b) parametric modeling or its equivalent, and (c) feature modeling or its equivalents.

Page 3, lines 16-24

Throughout this specification, examples and terminology will refer to Unigraphics® v-series software for illustrative purposes, but the method is not to be construed as limited to that particular software package. Other suitable CAD/CAM software packages that meet the three criteria above and that would therefore be suitable. For example, other suitable software packages include, but may not be limited to, SOLID EDGE®, also by Unigraphics®, CATIA® by IBM®. Note that the

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phrases "datum planes", "parametric modeling", and "features" are phrases derived from the Unigraphics® v-series documentation and may not necessarily be used in other software packages.

Page 13, lines 12-15

In the Unigraphics® environment, the exemplary embodiment takes advantage of the existing link and unlink functionality of the Unigraphics® CAD/CAM system software coupled with the methods of horizontally structured CAD/CAM modeling to facilitate an enhanced method of modeling.

Page 13, lines 20-22

The disclosed embodiments are equally applicable to any CAD/CAM system software, which exhibits or possesses the dictated requirements and capabilities.

Page 33, lines 17-17

It should be noted the disclosed embodiments may be implemented on any CAD/CAM software system that supports the following functions and capabilities: reference planes, datum planes or similar Cartesian equivalents; parametric modeling, or similar equivalent; and feature modeling or similar equivalents.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-3, 11-12, 23-28 are rejected under 35 U.S.C. § 102(b) as being anticipated by “Solid Edge™ User’s Guide Version 6” by Unigraphics Solutions™ Inc., © 1998 (Unigraphics).

Regarding claim 1, Unigraphics discloses a method of CAD/CAM modeling comprising adding form features to a model [“base feature (A) (page 28); “*protrusion*

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and rib commands to add material, and cutout and hole commands to remove material”

(page 33); etc.];

Establishing an exclusive parent/child relationship between a set of reference planes and each of the form features [*“Base reference planes are the three orthogonal reference planes at the origin of the model file. They define the principal x, y, and z planes. Base reference planes can be used in constructing any feature. They can also be used to position a part in an assembly.”* (page 96, emphasis added)];

Acting on at least one of the form features without affecting other of the form features [*“Suppressing Features” “A suppressed feature is not displayed in the graphic window and does not recompute when a feature it references is modified. The feature will recompute if it is unsuppressed later.”* (page 95)].

Unigraphics discloses the importance of changing relationships to capture design intent. Unigraphics explicitly discloses “If the assembly does not behave as you expect, you can delete the relationships and reapply them using a different approach. As you become more experienced, it will become easier to see which set of relationships correctly positions the parts, and gives you the behavior you want when design modifications are made.” (page 178)

In response, Applicants’ argue primarily that:

From the Solid Edge V6 User’s Guide, it does not appear that added parts are associated with the same planes that the base part is grounded with, rather that the added parts are positioned with respect to the base part itself using reference planes local to that feature. Accordingly, the base part and the added parts (1) do not have an exclusive parent/child relationship between *a set of reference planes and each of the parts* and (2) *acting on at least one of the parts will affect other parts*. (emphasis in original)

The Examiner traverses this argument as follows.

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Unigraphics discloses “*Base reference planes are the three orthogonal reference planes at the origin of the model file. They define the principal x, y, and z planes. Base reference planes can be used in constructing any feature. They can also be used to position a part in an assembly.*” (page 96, emphasis added)

Applicants cite support for their argument from Unigraphics, page 157. However this portion of the reference (pages 156-166) describes “Placing Parts in Assemblies,” which the claim does not require. Further, this portion is directed to placing *parts*, not *features*. The claim is drawn to, for example, “adding form features to a model,” not “placing parts in an assembly.”

Applicants’ arguments have been fully considered but have been found unpersuasive.

Regarding claim 2, Unigraphics discloses that acting on the at least one of the form features comprises suppressing the at least one form feature [“*Suppressing Features*” “*A suppressed feature is not displayed in the graphic window and does not recompute when a feature it references is modified. The feature will recompute if it is unsuppressed later.*” (page 95)].

Regarding claim 3, Unigraphics discloses the reference planes are children of the model [“*You can use both part and assembly reference planes to position parts in an assembly.*” (page 167); “*To position the o-ring on the shaft in the assembly, reference planes must exist in the correct locations in both the o-ring part and the shaft part* (page 167); Part reference planes belong to (are children of) the parts being modeled] and the

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model corresponds to a real-world part [*“For example, an o-ring part (A) does not have any cylindrical or planar faces to position it properly in the groove on the shaft.”* (page 167)].

Regarding claims 11 and 12, Unigraphics discloses wherein the set of reference planes comprises a first, second, and third reference plane positioned and oriented relative to a reference, and the reference planes are orthogonal [*“Base reference planes are the three orthogonal reference planes at the origin of the model file. They define the principal x, y, and z planes. Base reference planes can be used in constructing any feature. They can also be used to position a part in an assembly.”* (page 96)].

Regarding claims 23-28, Unigraphics discloses modifying a link among a plurality of modeling elements, wherein the link is an associative parent-child relationship, wherein modifying comprises removing the link, wherein modifying the link comprises establishing a link, and wherein substituting a second plurality of elements for the first plurality of elements (pages 143-149; 155).

Unigraphics discloses the importance of changing relationships to capture design intent. Unigraphics explicitly discloses “If the assembly does not behave as you expect, you can delete the relationships and reapply them using a different approach. As you become more experienced, it will become easier to see which set of relationships correctly positions the parts, and gives you the behavior you want when design modifications are made.” (page 178)

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5. Regarding claims 29-31, 39-40, and 51-56, Unigraphics discloses several models which appear to be substantially identical to the claimed model (pages 28-38). Please see MPEP 2113, *Product-by-Process Claims*. Although claims 29-56 may not exhibit the common appearance of a product-by-process claim, Applicants' admissions and disclosure establish that "a horizontally structured CAD/CAM model" is a CAD/CAM model defined by the process in which it was made and is therefore itself a product-by-process.

Applicants have not submitted arguments specifically addressing the unique aspects of these claims. Applicants arguments applicable to claims 29-31 and 51-56 have been addressed above.

6. Regarding claims 57-59, these claims recite a storage medium encoded with a machine-readable computer program code for the methods of claims 1-3. As Unigraphics discloses computer software (page 2), Unigraphics anticipates claims 57-59 for rationale similar to that given above regarding claims 1-3.

7. Regarding claims 70-72, these claims recite "a computer data signal [...] including code configured to cause a computer to implement a method" according to claims 1-3. As Unigraphics discloses computer software (page 2), Unigraphics anticipates claims 57-59 for rationale similar to that given above regarding claims 1-3.

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The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(f) he did not himself invent the subject matter sought to be patented.

8. Claims 57-82 are rejected under 35 U.S.C. § 102(f) because the applicant did not invent the claimed subject matter. Applicants' admission establishes that Applicant has invented a method of using CAD/CAM systems of the prior art. Applicant has not disclosed inventing a CAD/CAM system. As such, any claims directed to a system that facilitates this method must be regarded as being invented by another.

These rejections may be overcome by evidence that Applicant has somehow transformed the CAD/CAM systems of the prior art by some specialization. As currently disclosed, however, Applicants' method of horizontal CAD/CAM modeling merely uses the existing features of the prior art.

In response, Applicants' argue that:

The computer routines or programs developed by applicants allow for a novel method of modeling. Applicants have not claimed to invent a new computer language, but rather certain routines or programs that operate in existing domains. A storage medium having such routines stored thereon is novel. For at least all of the reasons set forth herein, these routines or programs do exist in the existing CAD/CAM systems. Accordingly, applicants respectfully request reconsideration and withdrawal of this rejection.

The Examiner respectfully submits that he does not understand Applicants' argument.

The Examiner does not understand Applicants' reference to "a new computer language." Applicants argue that "computer routines or programs [have been] developed by applicants" but appear to contradict that argument by stating that "these routines or programs do exist in the existing CAD/CAM systems." The Examiner is uncertain

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whether this is the correct interpretation of Applicants' argument, however this rationale does form the basis of the rejection under 35 U.S.C. § 102(f).

Claims 57-59 and/or 70-72 define computer software *for performing horizontal CAD/CAM modeling*. Applicants have disclosed in numerous citations (Applicants' Admissions) that the prior art CAD/CAM software is a preferred embodiment *for performing horizontal CAD/CAM modeling*. Therefore the Examiner concludes that claims 57-59 and 70-72 are broad enough in scope to attempt to patent the prior art CAD/CAM software which Applicants have disclosed but have not invented.

Applicants' arguments have been fully considered but have been found unpersuasive.

Claim Rejections - 35 USC § 103

The previous rejections under 35 U.S.C. § 103 have been withdrawn in light of the amendments to the claims. Applicants' arguments regarding those rejections have been considered but are moot in light of the new grounds of rejection.

Conclusion

The Unigraphics reference is cumbersome to provide in its entirety. The Examiner has attempted to provide at least every page cited in this and previous Office Actions. Should Applicants find additional sections necessary, a request can be made directly to the Examiner at the phone number provided below. It is noted, however, that Applicants' response cites pages not previously provided, and therefore Applicants may already have the entire reference in their possession.

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In the event that the Examiner has inadvertently omitted copies of a cited page, Applicants are requested to bring this to the Examiner's attention as quickly as possible to promote compact prosecution of the application.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason Proctor whose telephone number is (571) 272-3713. The examiner can normally be reached on 8:30 am-4:30 pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Rodriguez can be reached at (571) 272-3753. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.


Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist: 571-272-2100. Information regarding the

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status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jason Proctor
Examiner
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Paul L. Rodriguez 6/23/06
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